
ORAL HEALTH STATUS AMONG ELDERLY PEOPLE AT ASSIUT CITY

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SUMMARY

***This study aimed to:** assess the oral health status and identify the incidence of oral problems among elderly people in Assiut city. The study was conducted at dental and medical clinics as(diabetic, cardiology and medical out patient clinics) at Assiut University Hospital, Central Health Insurance Clinic, and General Assiut hospital "El Shamlah" in Assiut city. The total number of the study subjects was 500 elders aged 60+ years. Two tools were used to collect the data needed for the study. The first tool was structured interview sheet, it consisted of two parts, the first one was concerned with personal and socio-demographic characteristics of the study sample. The second part covered the elderly medical history, oro-dental complains, smoking habits and life style pattern related to oral health status as oral and denture hygiene practices and oral follow- up pattern. The second tool was the Chalmers Brief Oral Health Assessment Tool (2005). Data was collected during the period from the first of October 2008 to the end of March 2009. Results of the present study revealed that 89.4% of the studied elders aged 60-75 years. Illiterate elders represented 69.8% of the studied sample. The result also illustrated that 88.4% had one or more oro-dental complain including dental pain, teeth loss, oral dryness, bleeding and swallowing problems. Moreover, a significant difference was found between educational level of the studied elders and oral hygienic care. The study recommended that: Community out reach oral health services should be implemented to identify high risk group of elderly and elder's awareness about the importance of periodic dental check up should be encouraged.*

Key words: Oral health, oro-dental diseases, dental problems, aging changes.

INTRODUCTION

The age distribution of the world's population is changing. With advances in medicine and prolonged life expectancy, the proportion of older people will continue to rise worldwide. For example, there were 390 million people aged over 65 years recorded in the 1998 World Health Report, and this figure is estimated to double in 2025 (WHO, 2008).

The total populations in Egypt were 78.9 million at the end of July 2006, while the 65 years and over were represent 3.5 millions or 4.5 %. Also, the Egyptian life expectance increased to 68.7 years for male and 73.9 years for female. This might be related to medical and social development, which in tern has lead to great improvement in the health of people and consequently to the prolongation of life. Therefore, it is necessary to pay special attention to this sector of the population to meet their needs and help them to maintain health as long as possible (Central Intelligence Agency, 2007).

Aging is not a disease, but it could increase our susceptibility to disease. The common chronic diseases that affect older adults, the medications and treatments taken to alleviate these conditions, can affect the health of the oral cavity. As with medical diseases, dental diseases have strong behavioral, cultural and social components. Adults over the age of 65 have the highest proportion of out of pocket dental expenses; Medicaid and Medicare dental coverage is virtually non-existent. These structural weaknesses in the health care system adversely affect access to care (U.S. Department of Health and Human Services, 2000 c).

Poor oral health also in terms of function impairment and the negative impact on quality of life is fundamental to provision of adequate oral health care, communication and health education, and the organization of public health programmes for improved oral health of older people (WHO, 2004).

Oral health is an important component of general health, Also oral health is an essential part of primary care. Oral health screening and appropriate referral will contribute to the elders' quality of life. Good oral health has numerous benefits to systemic health. Dental health influences chewing, speaking, and swallowing, as well as self-image and self-esteem. Oral disease can be detrimental to health, particularly in the medically compromised elderly (Ham, et al, 2007).

Poor oral health can have a profound effect on the quality of life. The experience of pain, endurance of dental abscesses, problems with eating and chewing, embarrassment about the shape of teeth or about missing, discolored or damaged teeth can adversely affect people's daily lives and well-being. In recent years, much researches has demonstrated the impact of oral health on quality of life. A number of oral health related quality of life measures have been developed to assess the functional, psychological, social and economic implications, measures that are highly relevant to the evaluation of community oral health programmes (Roher & Bagramian, 2002).

The gerontological nurses as well as other health care professionals have a vital role in both general and oral health. Advocating oral health intervention programmes can qualify decisions affecting the oral health of elderly. Such as programmes must focus on enhancing awareness of the importance of oral health and help translate oral health knowledge into practice, as older people are less likely to have received health education early in life. In addition, the geriatric nurse should effectively address factors that prevent or hinder the population's access to and use of appropriate services and helping them to find free and inexpensive oral and dental-clinics for performing regular oral assessment at regular intervals (WHO, 2004).

Aim of the study

- To assess the oral health status among elderly people at Assiut city.
- To shed light on the oral health problems facing elderly people.

SUBJECTS AND METHOD

Research Design: Descriptive design was used in this research.

I. Settings

The study was carried out at dental and medical clinics as(diabetic, cardiology and medical out patient clinics) at Assiut University Hospital, Central Health Insurance Clinic, and General Assiut hospital "El Shamlah" in Assiut city. These hospitals provide free health care services for surrounding rural and urban areas.

Subjects

Elders aged 60 years and more who attended the previous mentioned out patient clinics were included in the study sample , the total number of them was (500) five hundred divided as follows: 40%(200) of them were interviewed at the Assiut University Hospital, 30% (150) from the Central Health Insurance Clinic and 30%(150) from The General Assiut Hospital.

Sample

Quota sample method was used to collect data.

Tools

Two tools were used to collect the data needed for the study. The first one is a structured interview form that used by the researchers to collect personal sociodemographic data such as (name, age, address, sex, marital status, level of education and occupation....etc), Elderly medical history, oro-dental complains, smoking habits and life style pattern related to oral health status such as oral and denture hygiene practices, and oral follow-up pattern. The second was the Chalmers Brief Oral Health Assessment Tool (2005). It was used in the present study to assess the oral health status of elderly in Assiut city. It includes six items that assess lips, gingival tissue, tongue, condition of natural teeth, denture (artificial teeth) and Oral cleanliness.

Data collection

- Formal administrative approvals were taken before the start of the fieldwork. Elders were briefed about the study, encouraged to participate. The researchers stressed on the issue of confidentiality. An oral consent was taken from the elderly to participate in the study after informing them that the information obtained will be confidential and used only for the purpose of the study. The researcher was spent two weeks of training in the dentistry clinic for the purpose of learn how to do oral assessment for the elderly persons before starting data collection. This training started from 9/8/2008 to 21/8/ 2008.

A pilot study was carried out before starting data collection on 20 of elderly patients who were excluded from the sample. The aim of pilot study was to test the clarity of tools and to estimate the time required to fill the sheet. Based on the result of the pilot study, the necessary modification was done.

Every elderly patient was interviewed individually; the purpose of the study was explained to them before starting the interview to gain their confidence and cooperation. Each interview took approximately (20-30) minutes to complete the study tools. Data was collected by the researcher during the period from the first of October 2008 to the end of March 2009. Every elderly was examined to assess his or her oral cavity and its contents systematically, either by inspection and palpation to identify any oral health related problems using disposable gloves, dental mirror, disposable tongue blade, source of light (torch) and sponge soaked with alcohol to clean dental mirror.

Data analysis

Data entry was done using the computer software package, while statistical analysis was done using the SPSS version 11 Statistical software program. Data was presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. Quantitative variables were compared using chi-square test. Statistical analysis significance was considered at P-value < 0.05.

RESULTS

Table (1) shows that the vast majority (89.4%) of the studied sample their age ranged between (60-75 years), while (9%) of them aged (75-85 years). the mean age \pm S.D was 66.08 ± 6.19 . also the table demonstrates that more than half (52%) of the studied sample were females, (72%) of them from rural areas. While more than two-thirds (69.8%) of them were illiterate.

Regarding the occupational status, it was clear that about two fifth (40.4%) of males were retired, while the vast majority (95.4%) of the female were house wives. About half (49.6%) of the studied male elders were ever smoked, while more than one-quarter (29.6%) of male elderly were currently smoker.

Table 2 illustrated that approximately three-quarters (73.4%) of the studied elders had one or more chronic disease as hypertension, diabetes mellitus, heart diseases, and other diseases such as "liver disease, renal disease, cancer, and bone diseases" (56.6%, 44.9%, 32.4%, and 29.9%), respectively. the majority of studied sample (88.4 %) had one or more oral complains. oro-dental complains as; dental pain, oral dryness, bleeding, swallowing/ chewing problems, and hot or cold dental sensitivity, (77.6%, 70.8, 45.4%, 39.8%, and 19.2%), respectively.

Regarding the elderly oral hygiene practice, table 3 demonstrate that approximately two-third (62.8%)of the study sample were not cleaned their teeth absolutely. While more than half (52.2%) of studied elders cleaning their teeth more than once daily, and (4.8%) only reported that they clean their teeth once/ week.

Also table (3) shows that nearly one-quarter (23.3%) of those who wear denture never clean their denture, and more than three quarter (76.7%) of them were clean their removable denture. Approximately two thirds (63.1%) of those who wear denture clean their removable dentures more than once daily.

Table (4) revealed the distribution of the studied sample according to the assessment of their oral cavity. It was clear that single lips lesion mainly dryness, chapped, or red at corners, swelling or lump, white/red ulcerated patch, bleeding/ulcerated at corners were observed in (46.2%) of the studied sample. While nearly two-thirds (66%) of the studied elders had multiple tongue lesions, such as; patchy, fissured, red, coated, patch that is red &/or white, ulcerated, swollen. Table (4) also shows that the majority (85.8%) of the studied elders had natural teeth, while about two-thirds (66.4%) of them were have 4 and more decayed or broken teeth/roots.

Moreover, it appears from this table, that over one-tenth (10.8%) of studied sample were wearing partial/complete removable denture, also the table revealed that more than half of the studied sample (56.8%) had double problems mainly halitosis (Bad breath) and accumulation of food particles/plaque.

The findings of table 5 revealed that more than one-quarter (28.4%) of illiterate elderly were maintains hygiene of their oral cavity. While the majority (82.9%) of the study sample who had university level of education maintains hygiene of their oral cavity. Statistically significant difference was found between oral hygiene and educational status (p-value < 0.000).

Table (6) shows that (50.7%) of the study sample who their oral hygiene were from urban and 31.9% of them were from rural areas .Statistically significant differences were observed between residence of study sample and oral hygiene (p< 0.000). Regarding the relation between oral hygiene and oral problems/ lesions among studied elders.

Table (7) demonstrates that there is statistically significant difference between lesions of lips and oral hygiene (p-value < 0.05), also between gums & tissues lesions and oral hygiene P < 0.01.

Table (1): Distribution of the studied elderly sample regarding to their socio-demographic characteristics (2008), Assiut city.

personal characteristics of studied elderly	(No. = 500)	
	No.	%
Age(years):		
60-	447	89.4
75-	45	9
85+	8	1.6
Range	60.0 - 93.0	
Mean ± SD	66.08 ± 6.19	
Gender:		
-Male	240	48
-Female	260	52
Residence:		
-Rural	360	72
-Urban	140	28
Marital status:		
-Married	352	70.4
-Widow	137	27.4
-Divorced	8	1.6
-Single	3	0.6
Educational status:		
-Illiterate	349	69.8
-Read/ Write	63	12.6
-Primary	8	1.6
-Preparatory	14	2.8
-Secondary	31	6.2
-University	35	7.0
Occupational status:		
1- Male:-		
-Retired after governmental job	97	40.4
-Technical work	89	37.1
-Another(not work and take El-sadat mash)	42	17.5
-Employer	12	5.0
2-Female:-		
-Housewife	248	95.4
-Retired	12	4.6
Smoking habit among males: ♦		
- Currently smoker	71	29.6
- Ever smoker	119	49.6
- Never smoker	50	20.8

♦ Number of males= 240.

Table (2): Distribution of studied sample regarding to their complaints, (2008), Assiut city.

Elders complaints	(No. = 500)	
	No.	%
Chronic disease:		
-Diseased	367	73.4
-Not diseased	133	26.6
Types of disease: ♦		
-Hypertension	208	56.6
-Diabetes	165	44.9
-Heart disease	119	32.4
-Others	110	29.9
Oro- dental complaints:		
-Yes	442	88.4
-No	58	11.6
Types of oro- dental complaints: ♦		
-Dental pain and teeth loss	343	77.6
-Oral dryness	313	70.8
-Bleeding	201	45.4
-Swallowing problems	176	39.8
-Dental sensitivity (cold& heat fluids &foods)	85	19.2
Duration of complaints:		
Less than 1year	111	22.4
(1-5 year)	160	31.9
(5-10 year)	77	15.4
(10-15 year)	54	10.8
(15-20 year)	19	3.8
20year +	21	4.2

♦ N.B more than one answer was listed.

Table (3): Distribution of the elderly people regarding to their oral hygiene practice (2008), Assiut city.

<i>Dental status</i>	(No. = 500)	
	No.	%
Oral hygiene practice:		
-Yes.	186	37.2
-No.	314	62.8
Frequency of dental cleansing♦		
-More than once /day	97	52.2
-Once/ daily	59	31.7
-More than once /week	21	11.3
-Once/ weekly	9	4.8
Teeth cleansing methods: ♦♦		
-Soap and water	122	65.5
-Tooth brushing	60	32.2
- <i>Salted water</i>	4	2.1
-Others	11	5.9
Denture wear:		
-Wearing	60	12.0
-Not wearing	440	88.0
Denture care:		
-Yes	46	76.7
-No	14	23.3
Frequency of denture cleaning: ♦♦♦		
-More than once daily	29	63.1
-Once/ daily	17	36.9
Methods of denture cleaning:		
-Soap and water	33	71.7
-Brushing with tooth paste	8	17.3
-Others method (powder and medical solution)	4	8.9
- Salted water	1	2.1

♦ Number = 186.

♦♦ Multiple responses were stated.

♦♦♦ Number = 46.

Table (4): Distribution of the studied elderly sample according to the assessment of oral cavity (2008), Assiut city.

Assessment items	(No. = 500)	
	No.	%
Lips:		
-Single lesion.	231	46.2
-Double lesion.	209	41.8
Multiple lesions. ♦	60	12
Tongue:		
-Single lesion.	15	3
-Double lesion.	155	31
Multiple lesions. ♦	330	66
Gingival tissue:		
-Single lesion.	21	4
-Double lesion.	101	20
Multiple lesions. ♦	378	76
Natural teeth:		
-Present.	429	85.8
-Absent.	71	14.2
Number of normal teeth present:		
- Had 1 to 3 decayed or broken teeth.	15	3.5
- Had 4+ decayed or broken teeth/roots	285	66.4
- Had less than 4 natural teeth.	129	30.1
Denture status:		
-Present.	60	10.8
-Absent.	446	89.2
Denture related lesions: ♦♦		
-Single denture related lesion.	51	85.0
-Double denture related lesions.	9	15.0
Oral cleanliness:		
-Food particles/plaque in small areas of the mouth.	143	28.6
-Food particles/plaque in most areas of the mouth/dentures	5	1.0
-Halitosis (bad breath).	1	0.2
-Double lesion.	184	56.8
- Clean oral cavity.	67	13.4

♦ Multiple lesions means more than one lesion was observed in the same person.

♦♦ Number=60

Table (5): Relation between oral hygiene and educational status of studied elderly sample (2008), Assiut city.

Educational status	Oral hygiene				SIG. TEST P-VALUE
	YES		NO		
	N0	%	N0	%	
Illiterate (n=349)	99	28.4	250	71.6	$\chi^2=60.7$ 0.000*
Read and write (n=63)	26	41.3	37	58.7	
Primary (n= 8)	2	25.0	6	75.0	
Preparatory (n= 14)	10	71.4	4	28.6	
Secondary (n= 31)	20	64.5	11	35.5	
University (n= 35)	29	82.9	6	17.1	

*There is a statistical significant difference.

Table (6): The relation between oral hygiene and residence of studied elders (2008), Assiut city.

Residence	Oral hygiene				SIG. TEST P-VALUE
	YES		NO		
	No.	%	No.	%	
Rural (n=360)	115	31.9	245	68.1	$\chi^2=15.2$ 0.000*
Urban (n=140)	71	50.7	69	49.3	

*There is a statistical significant difference.

Table (7): Relation between oral hygiene and observed oral problems/lesions among studied elders (2008), Assiut city.

Observed oral lesions	Oral hygiene(n=186)				SIG. TEST P-VALUE
	YES (n=186)		NO (n=314)		
	No.	%	No.	%	
Lips:					$\chi^2=5.4$ 0.05*
Single lip lesions.	95	51.1	136	43.3	
Double lesions.	76	40.9	133	42.4	
Multiple lesions.	15	8.1	45	14.3	
Tongue:					$\chi^2=2.41$ 0.300**
Single lesion.	8	4.3	7	2.2	
Double lesions.	61	32.8	94	29.9	
Multiple lesions.	117	62.9	213	67.8	
Gingival tissue:					$\chi^2=9.133$ 0.01*
Single lesion.	13	7.0	7	2.2	
Double lesions.	43	23.1	58	18.5	
Multiple lesions.	130	69.9	248	79.2	

*There is a statistical significant difference.

** There is no statistically significant difference.

DISCUSSION

Oral health can be an indicator of general health and quality of life in geriatric patients. Oral diseases are progressive and cumulative. They become more complex over time. Improved oral health will allow geriatric patients to improve their self-confidence, have active social contacts, and restore the ability to work at home or on the job (Shtereva, 2006).

Regarding age, the present study revealed that a statistically significant relation was found between age groups of studied elders and natural teeth about 12.5% of elders were edentulous aged 60 to 74 years old, compared to 37.5% from age group of 85+ years old. It was clear that edentulous is consistently show to increase with age. These results are similar to that reported by (Vilstrup, et al, 2007, Simunkovic et al, 2005, Abdel Moniem, 2004, Mack, et al, 2004, by Nederfors, 1998, Galan, et al, 1995 and Douglass, et al, 1993) .The above findings are confronted with the findings of a study conducted in France by Montal, et al, (2006) who reported that the prevalence of edentulous was 27%.

The present findings indicated that the majority of studied elders 89.8% had dental /oral complaints from age group of 60-64 year-old group, while only 1.8% in the age group 85+ year-old. This means that the young older adults is the age of beginning of oral health problems and reflect the serious effect of age and age related changes on the oral health status among elderly people.

The findings of the present study pointed out that 4.4% of elderly who maintain dental follow up were from rural society, compared with 12.1% from urban. This may be interpreted by the low concern elders provides to dental health, high costs of dental care or dental health services could not accessible/ available to them. Also, the present study illustrated a significant relation between residence and oral hygiene, about half 50.7% of elders who maintained their oral hygiene were from urban regions compared with 31.9% from rural areas. This may be also interpreted by decrease awareness about the importance of regular oral hygiene among rural communities.

Gilbert, et al, 2003 recognize that there is a positive relationship of educational level with dental education, favorable habits and greater oral care and access to dental services. Also, Eliopoulos, 2004 stated that dental follow up visits are important to monitor patient's condition and to determine the need for modifications in treatment and general health care.

The findings of the present study show a statistically significant difference between elder's education and oral hygiene. It was observed that illiterate elders had a low percent of oral hygiene. While it is increased among university educated elders. These results are in line with Abdel Moniem (2004) who found that illiteracy was prevailing among nearly half of the residents of elderly homes with statistically significant differences with oral health status.

The present findings showed that about three quarter of elders 73.4% had one or more chronic disease. Such finding is similar to that reported by Montal, et al, (2006) that 98.7% of the elderly had at least one of the pathologies. And agree with the findings reported by Ferreira, et al, (2008) in Brazil who reported that only 7.5% of elders had not any disease. The findings of the present study revealed that there is a significant relation (p -value = 0.001) between dental /oral complaints and medical conditions of elders.

The results of the present study showed that the prevalence of edentulous was 14.2%, and only 12.0% of the studied elders were worn denture. While Ferreria, et al, (2008) founded that removable complete dentures in both jaws were worn by 32.3 % of the edentulous elderly, and Abdel Moniem, (2004) documented that 24% of edentulous male and female elderly were worn denture.

In the current study, denture hygienic care was observed in 76.7% of elders. On the other hand, single denture related lesions was observed in the majority of them, these may be attributed to ill fitting denture (wide or tight), inadequate oral and denture care, and in appropriate dental follow up/ dental assessment.

These findings are consistent with that reported by Abdel Moniem, (2004) that denture hygiene represents 79.5% among institutionalized elderly homes. While it was confronted with that reported by Montal, et al, (2006) who found that prosthetic hygiene was satisfactory in 41.6% of the patients.

The finding of the present study revealed that oral hygiene represents about 37.2% among the studied elders. These findings are supported with Montal, et al, (2006) who documented that oral hygiene was satisfactory in 40% of cases.

In this study, oral lesions were concerned. About three quarter 76% of elders had gingival lesions. This may be due to poor quality of oral care, ill fitting denture, and the effect of age-related changes on gingival and tissues of the oral cavity. On the other hand, these findings stand in opposition to the results of Abdel Moniem, (2004), who mentioned that two fifth of elders had gingival lesions.

On the other hand, the present study revealed that about two- third (66%) of studied elders had tongue lesions. Similar findings are founded in the study carried out by Abdel Moniem, (2004) who reported that tongue lesions were observed in nearly two-third of the resident elders.

Recommendations:

1. Preventive-oriented oral health system should be established based on primary health care approach.
2. Nursing and medical staff providers should be trained to recognize common signs and symptoms of oral conditions that require a referral to the dentist.
3. Elderly people and their families should be acquainted with different oral health care services available in the community, which help them to meet their needs.
4. Increasing elders awareness about the importance of periodic dental check up which should be conducted at regular time interval. This action will help in early detection and prevention of oral and dental problems.

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الملخص العربي

تهدف هذه الدراسة إلى تقييم الحالة الصحية للفم لدى المسنين ومعرفة معدل حدوث مشاكل الفم والأسنان بين المسنين بمدينة أسيوط. تكونت عينة الدراسة من 500 مسن تراوحت أعمارهم من 60 عاماً فأكثر من المترددين على العيادات الخارجية لطلب الرعاية الطبية وهذه العيادات هي (الأسنان ، السكر ، عيادات الأمراض الباطنة ، عيادات القلب والضغط) في ثلاث مستشفيات بمدينة أسيوط وهم مستشفى أسيوط الجامعي ، مستشفى أسيوط العام (الشاملة) ، والعيادة المركزية للتأمين الصحي. ولقد تم استخدام أداتين لجمع البيانات اللازمة الأولى وهي إستمارة ملء الإستبيان عن طريق المقابلة الشخصية وهي تتكون من جزئين الأول يشمل البيانات الشخصية والثاني يشمل التاريخ المرضي وشكوى الفم، عادات التدخين ونمط الحياة بماله علاقة بصحة الفم. الأداة الثانية وهي أداة تقييم صحة الفم. تم جمع البيانات في الفترة من بداية أكتوبر 2008 الى نهاية مارس 2009. لقد أظهرت نتائج الدراسة أن معظم المسنين (89و4%) تراوحت أعمارهم ما بين 60 الى أقل من 75 عام. ووجد أن أكثر من ثلثي عينة الدراسة (8 و69%) كانوا أميين، و (7%) منهم فقط كان تعليمهم جامعي. كما أوضحت نتائج الدراسة أيضاً أن الغالبية العظمى (88و4%) من المسنين لديهم شكوى أو أكثر في الفم والأسنان مثل ألم وفقد الأسنان، جفاف ونزيف بالفم ، ومشاكل في البلع. كما بينت الدراسة أن هناك إختلاف ذا دلالة إحصائية بين المستوى التعليمي لعينة الدراسة والعناية بنظافة الفم. ولقد اوصت الدراسة بضرورة تفعيل خدمات صحة الفم المتنقلة للتعرف على المجموعة الأكثر عرضه من المسنين وزيادة وعي المسنين ومقدمي الرعاية لهم عن أهمية المتابعة الدورية للفم.